

WE CLAIM:

- 1       1. A process for the hydrogenation of alkylaryl  
2       ketones, which process comprises contacting a feed  
3       comprising the alkylaryl ketones and from 0.5% to 30%  
4       by weight of phenolic compounds with hydrogen in the  
5       presence of a heterogeneous hydrogenation catalyst.
- 1       2. The process of claim 1, in which the  
2       hydrogenation catalyst comprises copper as metal or  
3       metal compound.
- 1       3. The process of claim 1, wherein at least part of  
2       the phenolic compounds are added to the feed  
3       comprising the alkylaryl ketones.
- 1       4. The process of claim 1, comprising the steps of:
  - 2           (a) contacting a feed comprising the alkylaryl  
3           ketones and from 0.5% to 30% by weight of phenolic  
4           compounds with hydrogen in the presence of a  
5           heterogeneous hydrogenation catalyst; and,
  - 6           (b) removing at least part of the alkylaryl  
7           alcohol formed in step (a) from a stream comprising  
8           the phenolic compounds.
- 1       5. The process of claim 1, in which the alkylaryl  
2       ketone is acetophenone.
- 1       6. The process of claim 1, in which the feed  
2       comprising the alkylaryl ketones is obtainable by a  
3       process comprising the steps of:
  - 4           (i) contacting a feed comprising alkylaryl  
5           compounds with oxygen to obtain a feed comprising  
6           alkylaryl hydroperoxides and alkylaryl ketones;
  - 7           (ii) contacting the feed obtained in step (i) with  
8           an alkene in the presence of a catalyst to obtain a  
9           reaction mixture comprising alkylene oxide, alkylaryl  
10          alcohol and alkylaryl ketones; and,
  - 11          (iii) removing at least part of the alkylene oxide  
12          and alkylaryl alcohols from the reaction mixture

13        obtained in step (ii) to obtain the feed comprising  
14        alkylaryl ketones.

1        7. The process of claim 7, in which the  
2        hydrogenation catalyst comprises copper as metal or  
3        metal compound.

1        8. The process of claim 7, wherein at least part of  
2        the phenolic compounds are added to the feed  
3        comprising the alkylaryl ketones.

1        9. The process of claim 7, comprising the steps of:  
2            (a) contacting a feed comprising the alkylaryl  
3        ketones and from 0.5% to 30% by weight of phenolic  
4        compounds with hydrogen in the presence of a  
5        heterogeneous hydrogenation catalyst; and,  
6            (b) removing at least part of the alkylaryl alcohol  
7        formed in step (a) from a stream comprising the  
8        phenolic compounds.

1        10. The process of claim 7, in which the alkylaryl  
2        ketone is acetophenone.

1        11. A process for the preparation of a heterogeneous  
2        hydrogenation catalyst having an improved activity,  
3        which process comprises the steps of:  
4            (a1) preparing a hydrogenation catalyst that is  
5        essentially insoluble in the reaction medium; and,  
6            (a2) contacting the hydrogenation catalyst obtained  
7        in step (a1) with a feed comprising of from 0.5% to  
8        100% by weight of phenolic compounds.

1        12. The process of claim 12, wherein the  
2        hydrogenation catalyst comprises copper as metal or  
3        metal compound.

1        13. A catalyst obtainable by the process comprising:  
2            (a1) preparing a hydrogenation catalyst that is  
3        essentially insoluble in the reaction medium; and,

5           (a2) contacting the hydrogenation catalyst obtained  
6           in step (a1) with a feed comprising of from 0.5% to  
7           100% by weight of phenolic compounds.